

ABSTRACT

A monostatic radar signature is estimated of a sample object which is made of the same material as the target object. Using this monostatic radar signature estimation, the radar cross-section (RCS) per unit area is calculated for the sample object as a function of aspect angle and frequency. The target object is modeled so as to represent plural three-dimensional elements within the target object, and so as to associate an RCS per unit area value with every three-dimensional scattering element. An incoherent summation is performed of the three-dimensional scattering elements as a function of azimuth and frequency. One or more monostatic radar signatures can be estimated, and, correspondingly, one or more RCS per unit area values can be calculated. Every RCS per unit area value thus obtained can be incorporated in the modeling of the target object.